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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,680	01/18/2001	Juan R. Loaiza	50277-1633	6337

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EXAMINER

DOOLEY, MATTHEW C

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 09/11/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/765,680

Applicant(s)

LOAIZA ET AL.

Examiner

Matthew C. Dooley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 10-13, 21, 22 and 32-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 14-20, 23-31 and 38-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-49 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-9, 14-20, 23-31, 38-44, 45-49 are apparatus and method claims drawn to the maintaining of data integrity by use of a checksum on a block of data, which is classified in class 714, subclass 763.
 - II. Claims 10-13, 21-22, 32-37 are apparatus and method claims drawn to address insertion and verification prior to data storage into a memory device, classified in class 714, subclass 718.
2. The inventions of Group I and Group II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are drawn to error correction by means of a block coding techniques for Group I, while Group II is drawn to subject matter that involves the insertion and subsequent verification of an address value in the data block, at least by means of comparison.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

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5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with E. Becker, Reg No. 37,777, on 8/21/2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-9, 14-20, 23-31, 38-44, 45-49. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-13, 21-22, 32-37 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

8. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

9. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 102. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference

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sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

10. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: In Figure 2: 100 (Pg.10: 15), 106 (Pg.10: 18), 110(Pg.10: 19). A proposed drawing correction or corrected drawings or correction of the cited areas of the disclosure are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 1-9 and 23-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As per claims 1 and 23:

Claims 1 and 23 recite the limitation “performing a physical checksum calculation on a block of data in volatile memory”. The Applicant has failed to disclose subject matter that would allow one skilled in the art to make the checksum calculation in volatile memory. The specification does teach to checksum calculation for a data block prior to its being written to volatile memory in at least Figures 2 and 4a, as well as in the

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specification on page 11: 16-24. However, nowhere is it taught that the checksum calculation is made on a data block while in volatile memory. The fact that the checksum process is performed in conjunction with a set of instructions does not require or enable the aforementioned process to be performed in a specific volatile memory circuit. As such, the applicant has failed to fully enable claims 1 and 23.

As per claims 2-9 and 24-31:

Claims 2-9 and 24-31 further limit rejected claims 1 and 23, and as such, also fail to be enabled by the Applicant and are rejected under analogous reasoning to that used above.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 14-20, 38-49 are rejected under 35 U.S.C. 102(b) as being anticipated by DeRoo et al., U.S. 5,182,752.

As per claim 14:

DeRoo teaches to performing a physical checksum calculation on a block of data, after performing the calculation, performing a checksum verification procedure on the data prior to writing the block of data to nonvolatile memory, wherein the first physical checksum verification procedure indicates whether the data was corrupted subsequent to performing the physical checksum calculation on the data, and writing the data to

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nonvolatile memory if the data passes the first physical checksum verification procedure (Fig.2, 3a-3b; Col.4: line 53-Col.5: line 29).

As per claim 15:

DeRoo teaches to after writing the data to nonvolatile memory, causing the data to be read from nonvolatile memory and performing a second physical checksum verification procedure on the data wherein the second verification indicates whether the data was corrupted subsequent to performing the first physical checksum verification on the data (Fig.4b; Col.6: 20-21; Col.6: 47-Col.7: 18).

As per claim 16:

DeRoo teaches to the checksum verification procedure includes the steps of performing a plurality of checksum verification procedures on the data prior to writing the block of data to nonvolatile memory, wherein the plurality of physical checksum verification procedures indicate whether the data was corrupted subsequent to performing the physical checksum calculation on the data (Fig. 2, 3a-3b; Col.4: line 53-Col.5: line 29).

As per claim 17:

Utilization of both hardware and software for checksum calculation and verification is known in the art and utilization of one technique respective to another can be made based on speed and size requirements. Therefore, the method of DeRoo is consistent with utilizing a software application for the checksum calculation, while utilizing another component, such as the component illustrated in Figure 2, for

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performing the first physical checksum verification procedure on the data prior to the writing of the data to the nonvolatile memory.

As per claim 18:

Analogous circuitry to that used by the applicant is disclosed by DeRoo whereby a physical checksum verification procedure is performed on the data, wherein the data is written to storage only after the integrity of the data is verified (Fig. 2, 3a-3b; Col.4: line 53-Col.5: line 29).

As per claim 19:

DeRoo teaches to the step of after performing the checksum calculation, performing a logical check on data and if the data does not pass the logical check, then not writing the data to nonvolatile memory (Col.5: 40-49).

As per claim 20:

Utilization of both hardware and software for checksum calculation and verification, and logic check determination is known in the art and utilization of one technique respective to another can be made based on speed and size requirements. Therefore, the method of DeRoo is consistent with utilizing a software application for the checksum calculation and logical check, while utilizing another component, such as the component illustrated in Figure 2, for performing the first physical checksum verification procedure on the data prior to the writing of the data to the nonvolatile memory.

As per claim 38:

DeRoo teaches to performing a physical checksum calculation on a block of data, after performing the calculation, performing a checksum verification procedure on the

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data prior to writing the block of data to nonvolatile memory, wherein the first physical checksum verification procedure indicates whether the data was corrupted subsequent to performing the physical checksum calculation on the data, and writing the data to nonvolatile memory if the data passes the first physical checksum verification procedure (Fig.2, 3a-3b; Col.4: line 53-Col.5: line 29).

As per claim 39:

DeRoo teaches to after writing the data to nonvolatile memory, causing the data to be read from nonvolatile memory and performing a second physical checksum verification procedure on the data wherein the second verification indicates whether the data was corrupted subsequent to performing the first physical checksum verification on the data (Fig.4b; Col.6: 20-21; Col.6: 47-Col.7: 18).

As per claim 40:

DeRoo teaches to the checksum verification procedure includes the steps of performing a plurality of checksum verification procedures on the data prior to writing the block of data to nonvolatile memory, wherein the plurality of physical checksum verification procedures indicate whether the data was corrupted subsequent to performing the physical checksum calculation on the data (Fig. 2, 3a-3b; Col.4: line 53-Col.5: line 29).

As per claim 41:

Utilization of both hardware and software for checksum calculation and verification is known in the art and utilization of one technique respective to another can be made based on speed and size requirements. Therefore, the method of DeRoo is

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consistent with utilizing a software application for the checksum calculation, while utilizing another component, such as the component illustrated in Figure 2, for performing the first physical checksum verification procedure on the data prior to the writing of the data to the nonvolatile memory.

As per claim 42:

Analogous circuitry to that used by the applicant is disclosed by DeRoo whereby a physical checksum verification procedure is performed on the data, wherein the data is written to storage only after the integrity of the data is verified (Fig. 2, 3a-3b; Col.4: line 53-Col.5: line 29).

As per claim 43:

DeRoo teaches to the step of after performing the checksum calculation, performing a logical check on data and if the data does not pass the logical check, then not writing the data to nonvolatile memory (Col.5: 40-49).

As per claim 44:

Utilization of both hardware and software for checksum calculation and verification, and logic check determination is known in the art and utilization of one technique respective to another can be made based on speed and size requirements. Therefore, the method of DeRoo is consistent with utilizing a software application for the checksum calculation and logical check, while utilizing another component, such as the component illustrated in Figure 2, for performing the first physical checksum verification procedure on the data prior to the writing of the data to the nonvolatile memory.

As per claim 45:

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DeRoo teaches to a storage medium and a storage mechanism coupled to the medium configured to perform one or more verifications on a block of data prior to allowing the data to be written to the storage medium, wherein the set of one or more verifications include a checksum verification that indicates whether the data was corrupted subsequent to performing the physical checksum calculation on the data, and writing the data to nonvolatile memory if the data passes the first physical checksum verification procedure (Fig. 1,2).

As per claim 46:

The set of verifications includes a logical check on the data (Col.5: 40-49).

As per claim 47:

The logical check taught by DeRoo is performed after the physical checksum verification (Fig. 3a-3b; Col.5: 40-49).

As per claim 48:

DeRoo teaches to after writing the data to nonvolatile memory, causing the data to be read from nonvolatile memory and performing a second physical checksum verification procedure on the data wherein the second verification indicates whether the data was corrupted subsequent to performing the prior physical checksum verification on the data (Fig.4b; Col.6: 20-21; Col.6: 47-Col.7: 18).

As per claim 49:

DeRoo teaches to a storage medium and a storage mechanism coupled to the medium configured to perform a logical check on data after performing the checksum

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calculation and if the data does not pass the logical check, then not writing the data to nonvolatile memory (Fig. 1, 2; Col.5: 40-49).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Gerbault et al. U.S. 6,324,661: Fig.1-2
- b. Cox et al. U.S. 6,438,724: Fig.1c, Col.3: 45-50, Col.7: 25-31
- c. Cox et al. U.S. 6,446,234: Fig.1c, Col.3: 44-49, Col.7: 25-31

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Dooley whose telephone number is (703) 306-5538.

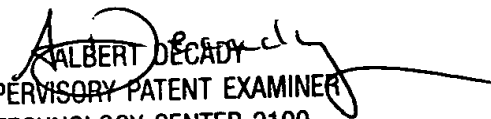
The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



Matthew Dooley
Examiner AU 2133
09/04/2003



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